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Title: Area G FTWC Venting System

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Intended for: Internal presentation to FTWC project members; supplemental info for reports

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Area G FTWC Venting System

Written by Sam Sherrill, EPC-CP

Reviewed/Presented by Rebecca Lattin, EPC-CP

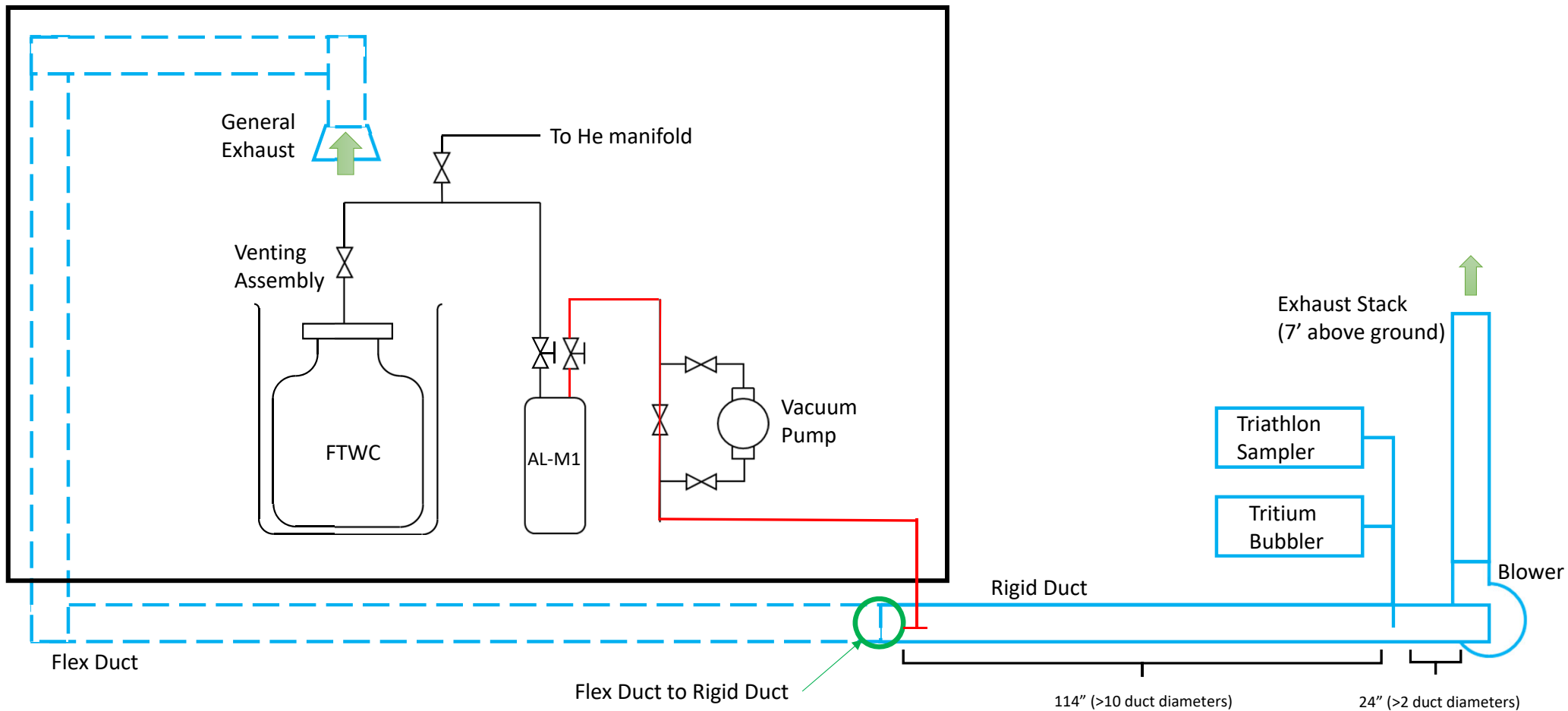
Final Review by Dave Fuehne, EPC-CP

Goals of the system

- Control and monitor emissions
- Provide a known flow rate to determine emissions
- Provide real-time emission data and regulatory compliance measurements
- Connect to FTWC vent rig
- Provide general area exhaust to capture any unplanned releases
- Elevate exhaust away from workers
- Dilute Hydrogen gas to non-hazardous concentrations

Exhaust System Schematic

TA-54-1028 (Metal Shed)

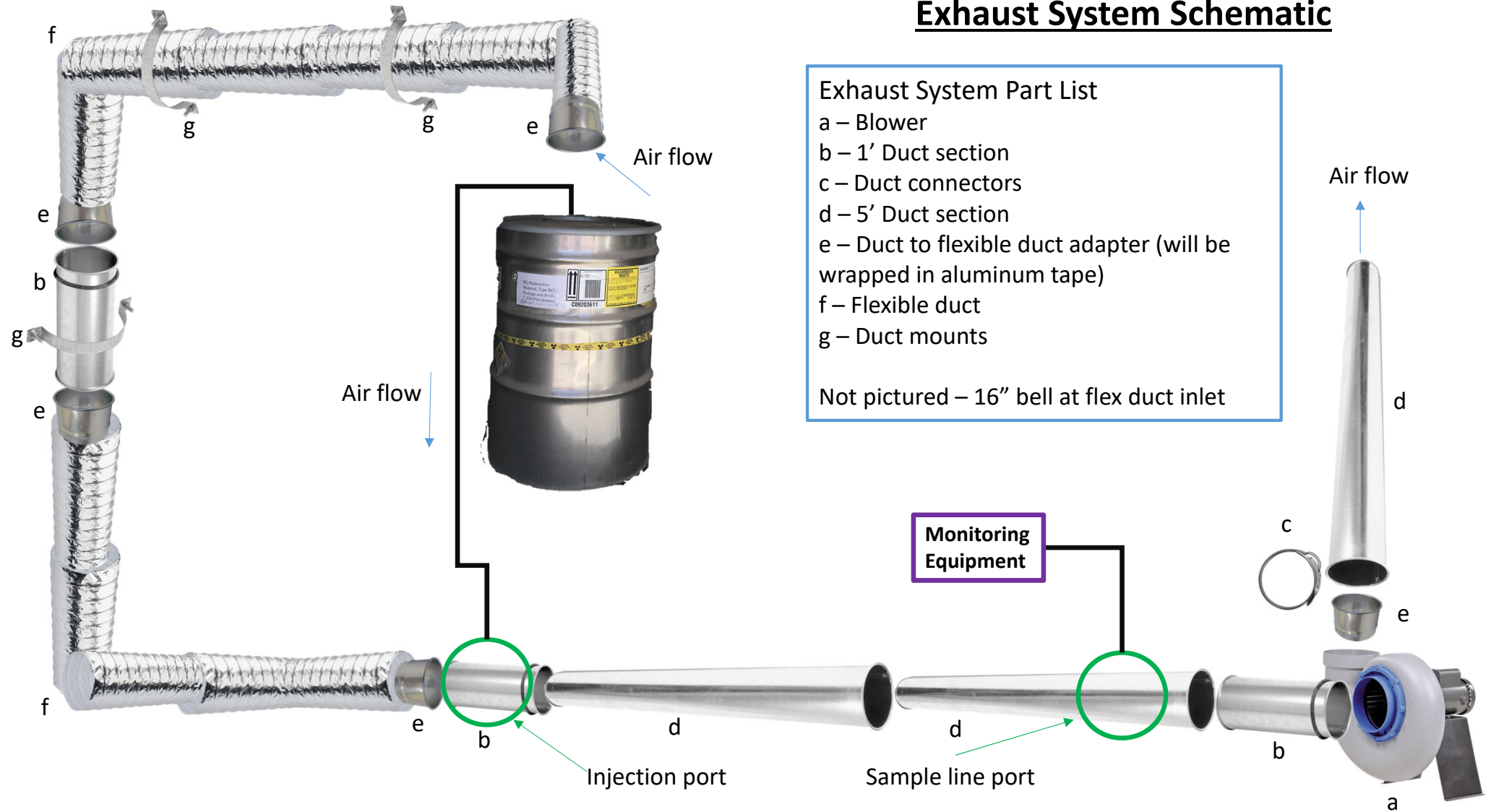


Exhaust System Schematic

Exhaust System Part List

- a – Blower
- b – 1' Duct section
- c – Duct connectors
- d – 5' Duct section
- e – Duct to flexible duct adapter (will be wrapped in aluminum tape)
- f – Flexible duct
- g – Duct mounts

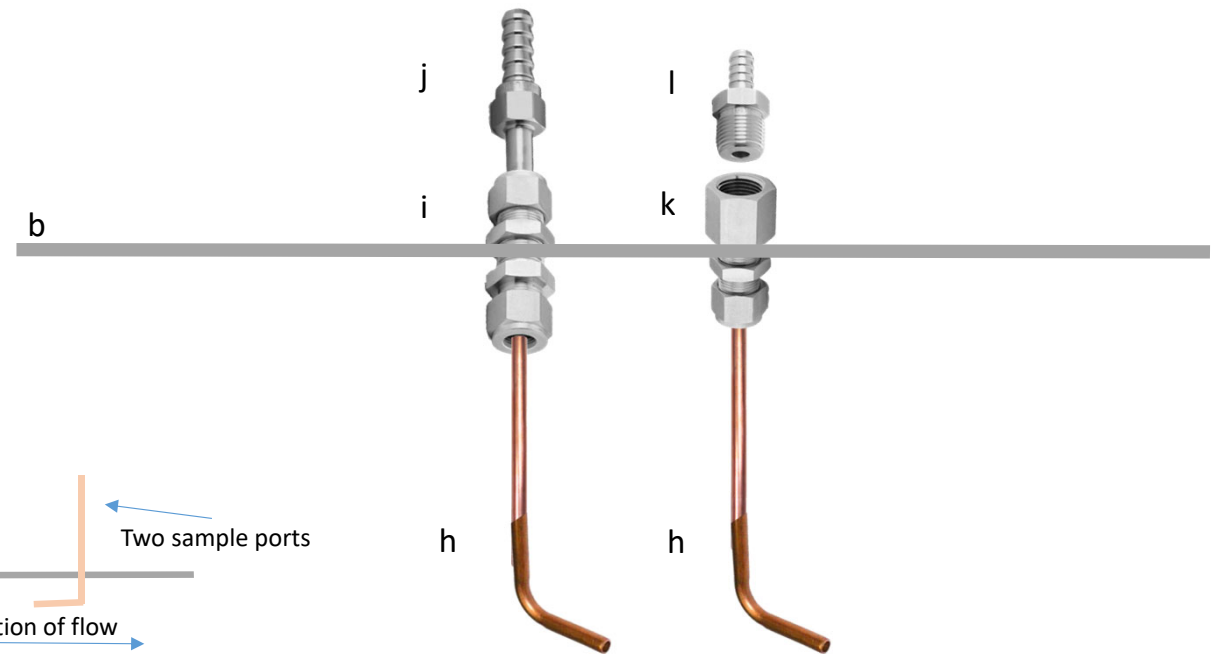
Not pictured – 16" bell at flex duct inlet



Sample Line Schematic

Sample Line System Part List

- b – 1' Duct section
- h – ¼" Copper tube (90 degree bend)
- i – ¼" tube to ¼" tube bulkhead
- j – ¼" tube to ¼" hose adapter
- k – ¼" tube to female NPT bulkhead
- l – Male NPT to 3/16" hose adapter

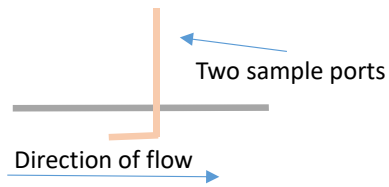


Direction of flow
→



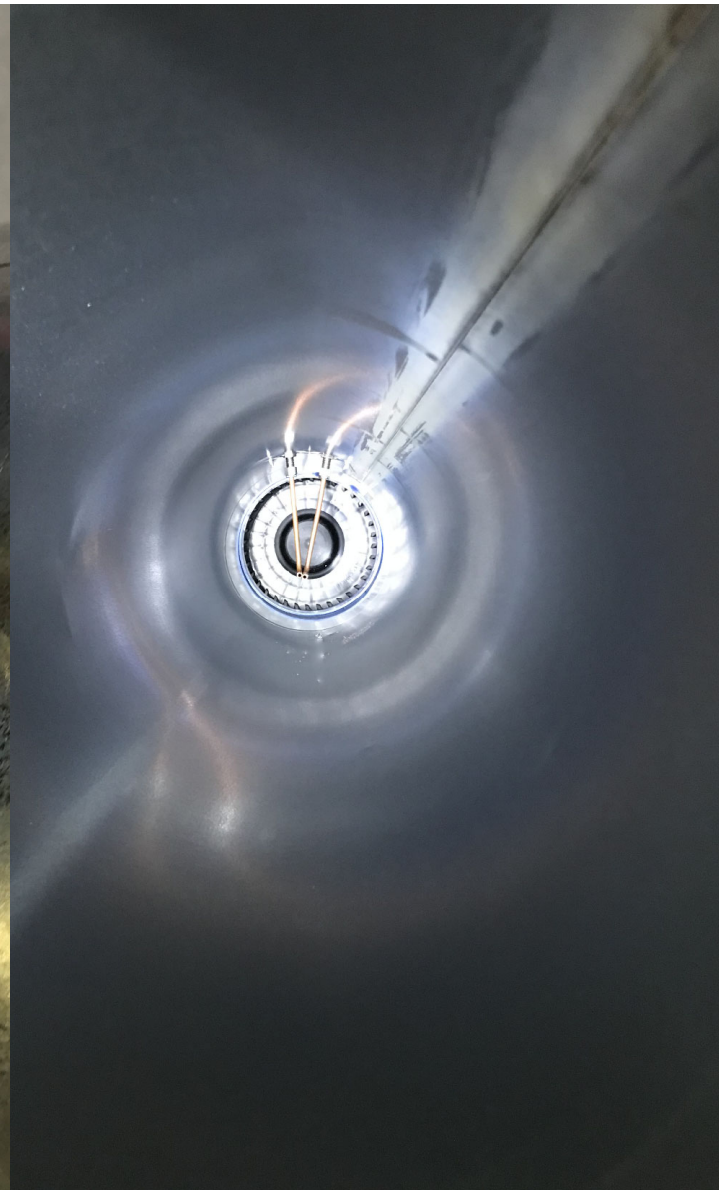
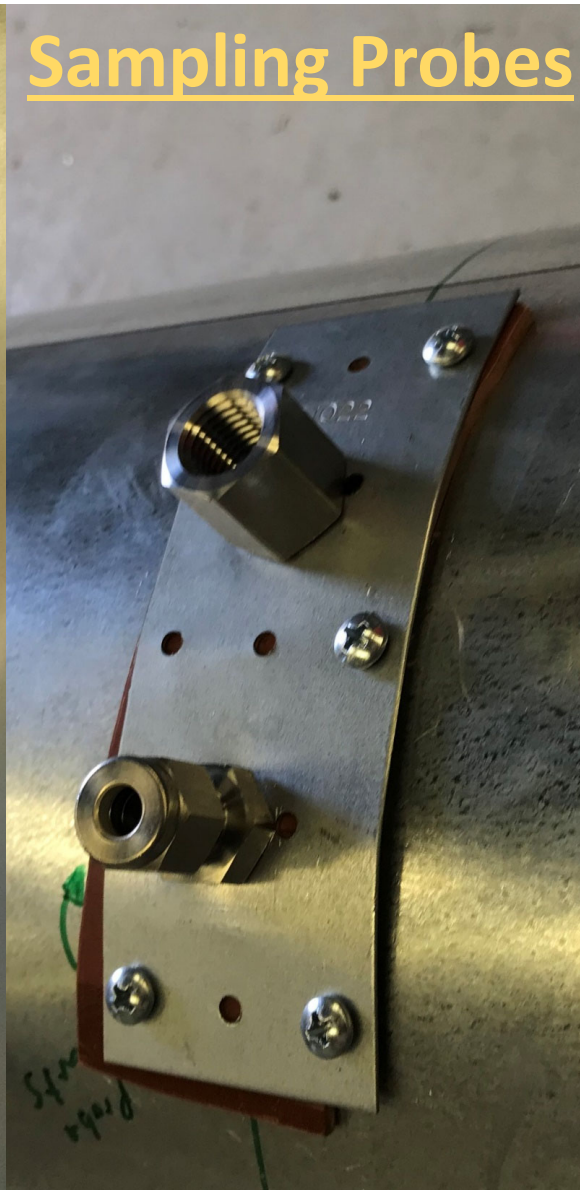
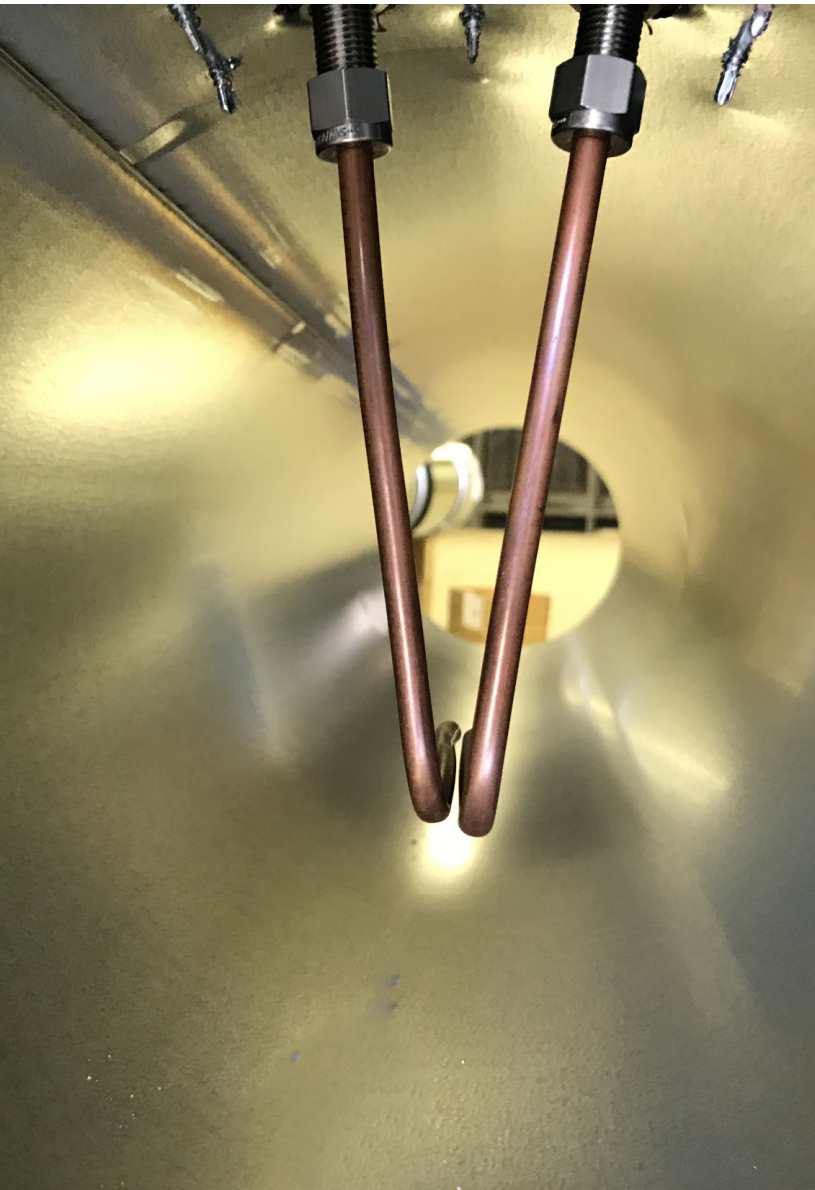
Ariel view
(ports are side by side)

Two sample ports



Side View
(ports are side by side)

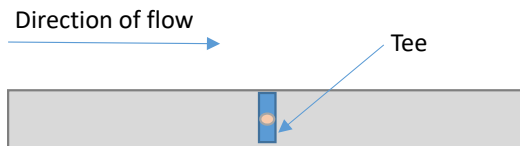
Sampling Probes



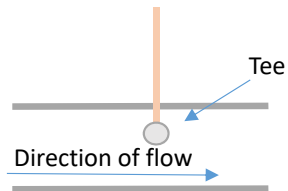
Injection System Schematic

Injection System Part List

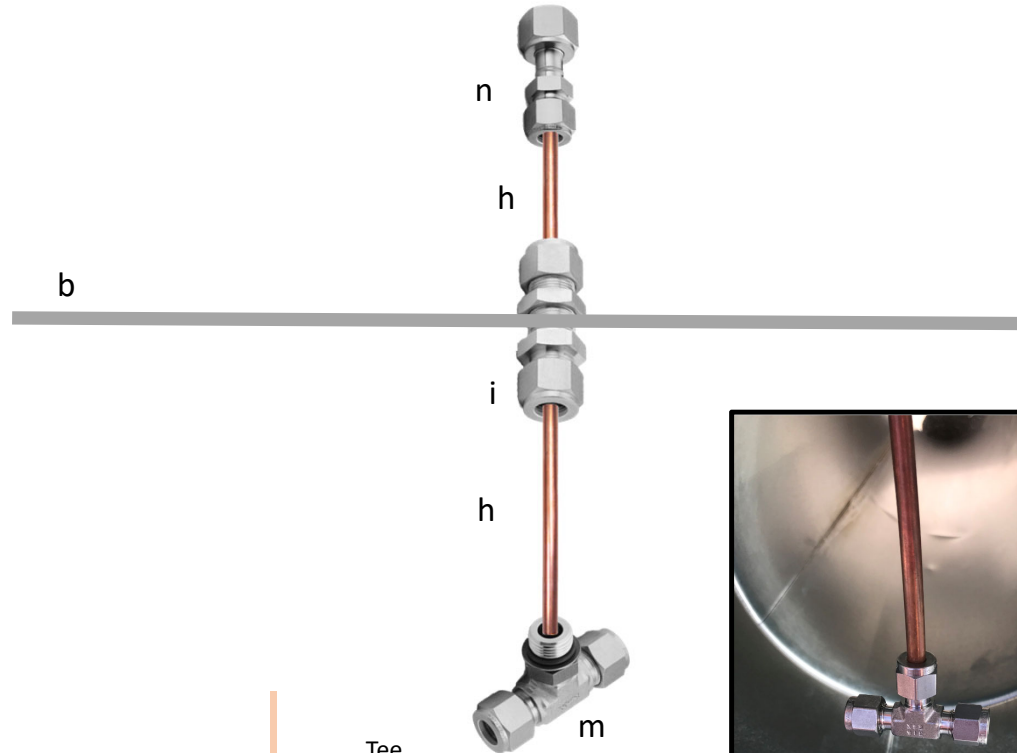
b – 1' Duct section
h – $\frac{1}{4}$ " Copper tube
i – $\frac{1}{4}$ " tube to $\frac{1}{4}$ " tube bulkhead
m – Tee adapter
n – $\frac{1}{4}$ " tube to female VCR adapter



Ariel view
(tee is perpendicular to flow)



Side View
(tee is perpendicular to flow)







Config #1:
Rigid duct only
Flow Rate:
1812 acfm
Velocity:
3322 ft/min



Profile 1 (3/4 HP Blower)

Config #2: Rigid+25 ft flex
Flow Rate: 1154 acfm
Velocity: 2115 ft/min



Config #3: Rigid+50 ft flex
Flow Rate: 785 acfm
Velocity: 1440 ft/min

Example Setup



16" Expansion
Bell @ Flex Inlet



Example Setup – hang from overhead fixture



Profile 2 (2 HP Blower)



Config #2: 25 ft flex
Flow Rate: 1915 acfm
Velocity: 3511 ft/min



Config #3: 50 ft flex
Flow Rate: 1528 acfm
Velocity: 2802 ft/min





Generator (Power Source)

Manufacturer:	WhisperWatt
Model:	DCA-15SPX3
Fuel:	Diesel (#2)
Capacity:	28 gallons (approx); using supplemental tank in trailer, not in generator body
Web Site Info:	http://www.multiquip.com/multiquip/DCA15SPX.htm

Power Output

rating	15 kW
voltage	120V or 240V, single phase
amps	62.5 amps

Outlets:

	on 65A circuit	<u>13.2 kW on 65A circuit</u>
duplex 20A	standard 3-prong dual receptacle	2400 watts max
120V, 30A	5L-30 receptacle	3600 watts max
240V, 30A	6L-30 receptacle	7200 watts max
on 50A circuit		
120 or 240V; 50A; "california standard" recep.		12 kW on 50A circ only

